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(54) **DUAL MODE BIT AND GAIN LOADING
CIRCUIT AND PROCESS**

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9930465 6/1999 (WO).

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(52) **U.S. Cl.** 375/260; 375/225; 375/240;
370/231; 370/468

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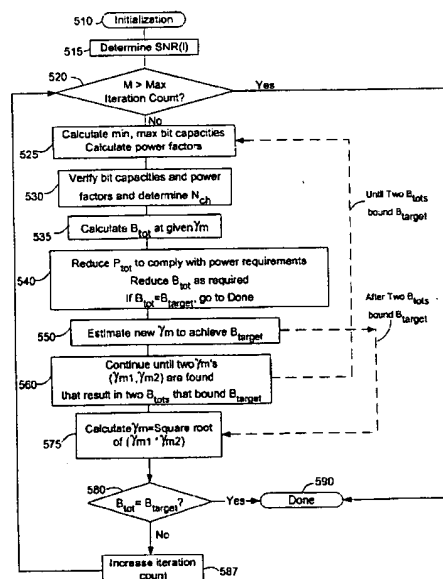
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(57) ABSTRACT

A circuit and method that optimizes and adapts the bit and energy configurations of data sub-channels in a multi-channel data transmission signal is disclosed. A high speed system can select either of a first or a second adaptation routine to handle changes in the bit and gain loadings of sub-channel carriers based on line disturbances or transmission change requests, based on which is most aptly suited to handle the particular change. In a preferred embodiment the resulting bit/energy loadings can be adjusted to be fully compliant with applicable Discrete Multi-Tone (DMT) implementations of Asymmetric Digital Subscriber Loop (ADSL) protocols.

19 Claims, 10 Drawing Sheets



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